Drinking Water Surveillance Program

DESERONTO WATER TREATMENT PLANT

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DESERONTO
WATER TREATMENT PLANT

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1988

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EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

DESERONTO WATER TREATMENT PLANT
1988 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The Deseronto Water Treatment Plant is a conventional treatment plant that treats water from the Bay of Quinte. The treatment process consists of flocculation, sedimentation, filtration, and disinfection. Carbon contactors are used for taste and odour control as necessary. This plant has a design capacity of 2.9 x 1000 m^3/day and serves a population of 2,000.

Water samples of the raw and treated water from the plant and from one distribution system site were taken monthly. The Deseronto Water Treatment Plant was sampled, for approximately 160 parameters, thirteen times during 1988. Parameters were divided into the following groups: Bacteriological, Inorganic and Physical (Laboratory Chemistry, Field Chemistry and Metals) and Organic (Chloroaromatics, Chlorophenols, Pesticides and PCB, Phenolics, Polynuclear Aromatic Hydrocarbons, Specific Pesticides and Volatiles). Specific Pesticides and Chlorophenols were analysed in June and November only.

A summary of results is shown in Table 1.

The health-related Ontario Drinking Water Objective (ODWO) of 1 FTU for Turbidity was exceeded in April and August, the District Officer was notified. All other Inorganic and Physical parameters were below any applicable health related ODWOs.

Of a total of approximately 110 Organic parameters tested on a monthly basis, none exceeded health related guidelines.

During 1988 the DWSP sampling results indicated that the Deseronto Water Treatment Plant produced good quality water at the plant and this quality was maintained in the distribution system.

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM DESERONTO WTP

SUMMARY TABLE BY SCAN

SCAN	RAW TESTS	RAW POSITIVE	RAW %POSITIVE	TREATED TESTS	TREATED POSITIVE	TREATED %POSITIVE	SITE 1 TESTS	SITE 1 POSITIVE	SITE 1 %POSITIVE
BACTERIOLOGICAL	45	37	82	56	19	33	42	11	26
CHEMISTRY (FLD)	39	39	100	71	71	100	115	115	100
CHEMISTRY (LAB)	248	216	87	263	192	73	428	370	86
METALS	311	158	50	311	122	39	564	249	44
CHLOROAROMATICS	168	0	0	182	0	0	168	0	0
CHLOROPHENOLS	12	0	0	12	0	0	.	.	.
PAH	221	0	0	221	0	0	.	.	.
PESTICIDES & PCB	407	0	0	428	0	0	396	0	0
PHENOLICS	13	7	53	13	4	30	.	.	.
SPECIFIC PESTICIDES	56	0	0	56	0	0	0	0	0
VOLATILES	287	1	0	287	32	11	258	29	11
TOTAL	1807	458		1900	440		1971	774	

THE ODWO OF 1 FTU WAS EXCEEDED IN TWO TREATED WATER SAMPLES. NO OTHER HEALTH-RELATED GUIDELINES WERE EXCEEDED.

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

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INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. Currently, 52 plants are being monitored.

The DWSP was initiated at the Deseronto Water Treatment Plant during the fall of 1987. An Annual Report was published for 1987 (ISSN 0840-5131).

This report contains information and results for 1988.

PLANT DESCRIPTION

The Deseronto Water Treatment Plant treats water from the Bay of Quinte. The process consists of coagulation, flocculation, sedimentation, filtration and disinfection. Flocculation and sedimentation is achieved through the use of an upflow clarifier. Two granular activated carbon contactors are used following

conventional treatment when necessary, to eliminate taste and odour problems. The carbon contactors can be by-passed. The plant has a design capacity of 2.9 x 1000 m^3/day and sample day flows ranging from 0.892 x 1000 m^3/day to 2.7 x 1000 m^3/day. This plant serves a population of 2,000.

The plant location is shown in Figure 1. Plant process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

METHODS

Water samples were obtained from three DWSP approved locations;

i) Plant Raw - The water originated from the lowlift discharge prior to chlorination and was sampled through a stainless steel line. The sample tap is located in the plant basement.

ii) Plant Treated - The water originated from the highlift well after addition of all treatment chemicals and was sampled through a stainless steel sample line. The sample tap is located in the plant laboratory.

iii) Distribution System - Site 1 - This house is approximately 0.5 kilometer from the plant. Water was sampled through copper plumbing from the kitchen sink.

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

DESERONTO WATER TREATMENT PLANT

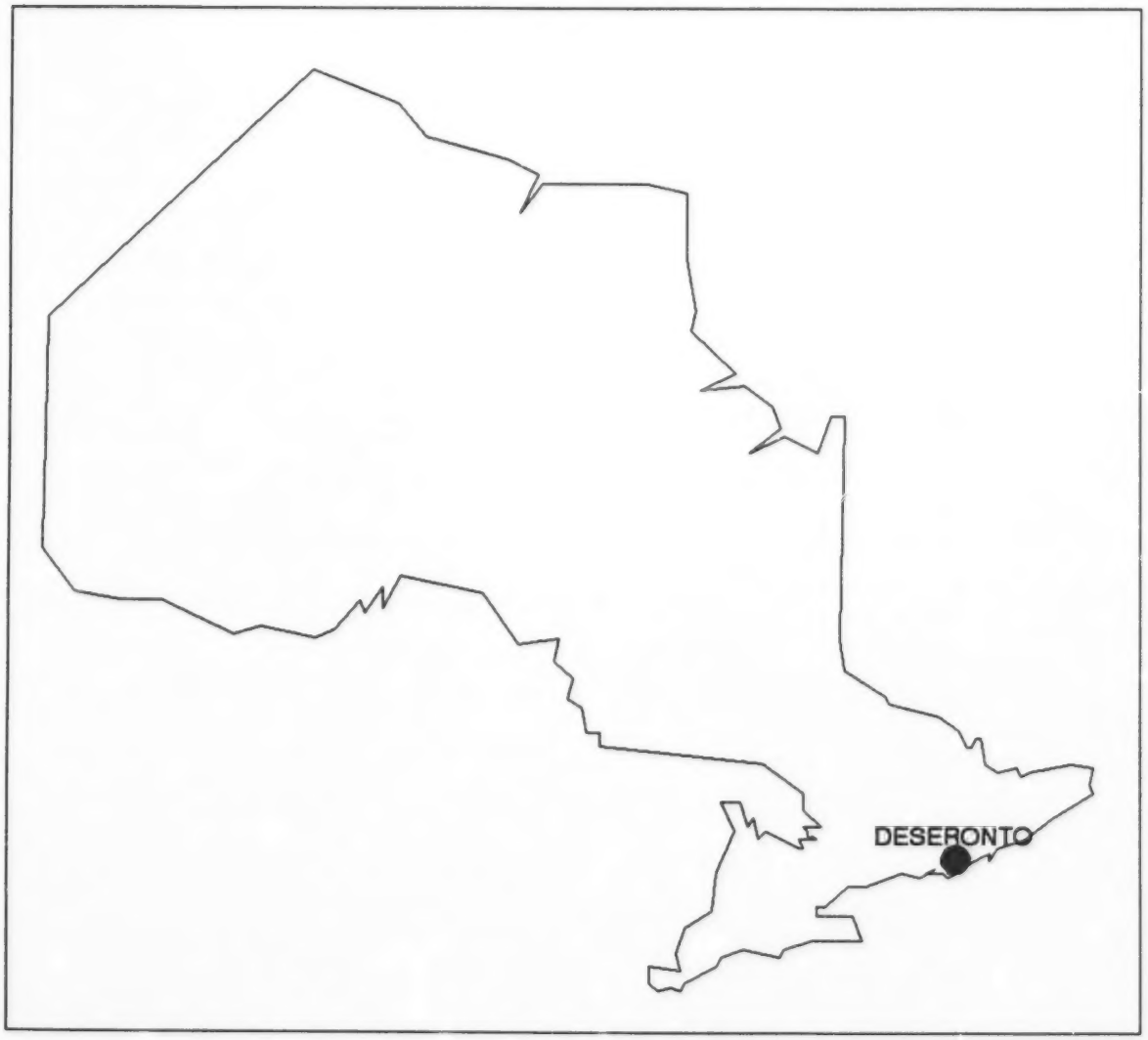

Figure 2

DESERONTO WATER TREATMENT PLANT

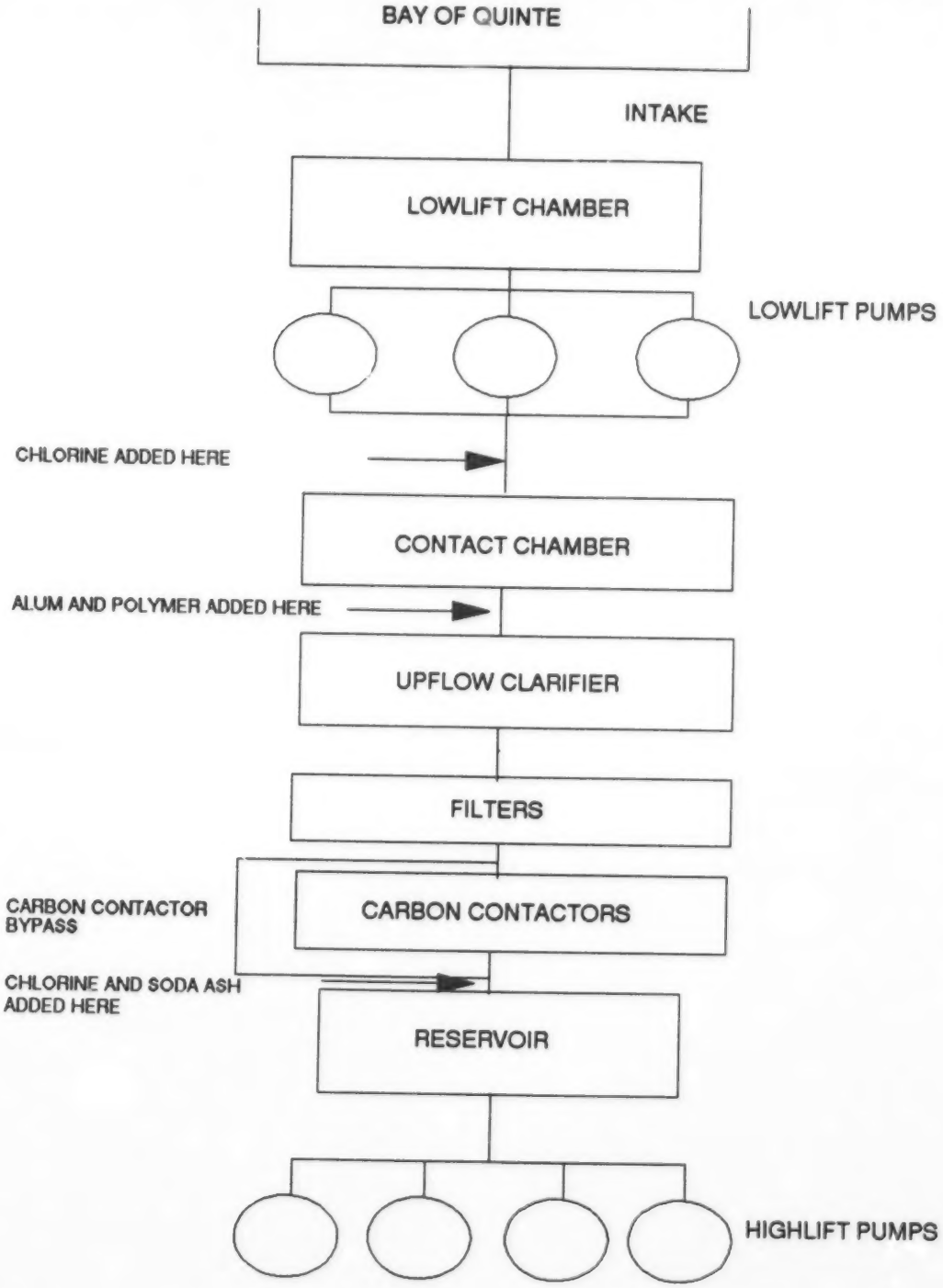

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

DESERONTO WATER TREATMENT PLANT

LOCATION:	WATER STREET, PO BOX 500 DESERONTO, ONTARIO (613-396-3436)
SOURCE:	RAW WATER SOURCE - BAY OF QUINTE
RATED CAPACITY:	2.9 (1000 M^3/DAY)
OPERATION:	MINISTRY OF ENVIRONMENT
PLANT SUPERINTENDENT:	J.M. LEWIS
MINISTRY REGION:	SOUTHEASTERN
DISTRICT OFFICER:	J. BISHOP

MUNICIPALITY SERVED	POPULATION
DESERONTO	1,849
TYENDINAGA RESERVE	500

Sample lines were flushed prior to sampling to ensure that the water obtained was indicative of its origin and not residual water standing in the sample line.

At the distribution system location two types of samples were obtained: a standing and a free flow. The standing sample consisted of water that had been in the household plumbing and service connection for a minimum of six hours. These samples are used to make an assessment of the amount by which the levels of inorganic compounds and metals may be changed on standing, due to leaching from (or deposition on), the plumbing system. The only analyses carried out on the standing samples therefore, are General Chemistry and Metals. The free flow sample represented fresh water from the distribution main that had been flowing from the sample tap for five minutes before being sampled.

Attempts were made to capture the same block of water at each sampling point by taking the retention time into consideration. The retention time was calculated by dividing the volume of water between the two sampling points by the sample day flow. For example, if it was determined that the retention time within the plant was five hours then there would be a five hour interval between the raw and treated sampling. Similarly, if it was estimated that it took approximately one day for the water to travel from the plant to the distribution system site, this site would be sampled one day after the treated water from the plant.

Stringent DWSP sampling protocols were followed to ensure that all samples were taken in a uniform manner.

Sample day flow, treatment chemical dosages and Field Chemistry measurements such as Turbidity, Chlorine Residuals, pH and Temperature were recorded on the day of sampling and were entered onto the DWSP data base as submitted.

RESULTS

The Deseronto Water Treatment Plant and distribution system site were sampled for approximately 160 parameters on a monthly basis. The Specific Pesticides and Chlorophenols scans were sampled in June and November only. Polynuclear Aromatic Hydrocarbons and Phenolics are only analysed in the raw and treated water at the plant. As a result of an unforeseen emergency the laboratory capacity was exceeded and analysis for volatiles could not be carried out when the samples were received. Since analysis for volatiles is no longer valid after four weeks of storage, volatile results for February or March are not available.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analysed, by parameter and by water type. The number of times that

a positive or trace result was detected is also reported.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analysed in the DWSP.

Associated guidelines and detection limits are also supplied on tables 5 and 6. Parameters are listed alphabetically within each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters, which are currently under review. When an ODWO is not available guidelines/limits from other

agencies are consulted. The Parameter Listing System (PALIS) recently published (ISBN 0-7729-4461-x) by the MOE catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Although some of the parameters measured on DWSP may be present in the raw and treated water as a result of pollution, many of the compounds detected are naturally occuring or are treatment by-products.

Plant operational personnel address occurrences of taste and odour or biological water quality parameters. The DWSP does not assess these aspects of the water supply.

As stated under Results, traces do not indicate quantifiable values, as defined by established MOE Laboratory analytical reporting protocols. While they can be useful in trend analysis or confirmation of the presence of a specific contaminant that is repeatedly detected at these levels, the occasional finding of a trace level of a contaminant is not considered to be significant. **DISCUSSION OF GUIDELINES AND LIMITS THEREFORE, IS ONLY CONDUCTED ON POSITIVE RESULTS.**

Bacteriology

Positive results for the Bacteriology scan were present nineteen times in the treated water and eleven times in the distribution

system Site 1 water. In most cases the positive parameters were Standard Plate Count, Total Coliform and/or Total Coliform Background.

As the result of a positive Presence/Absence (P/A) test, Coliforms were detected in one of three of the January treated water samples: this was confirmed by the membrane filtration test which detected Total Coliforms at 24 counts/100mL in the same sample. Aeromonas were detected in the August treated water sample as the result of a positive P/A test; the August sampling corresponded with a breakdown in chlorination equipment. The District Officer was notified on both occasions.

Standard Plate Count is a test used to supplement routine analysis for Coliform bacteria. The limit for Standard Plate Count (at 35°C after 48 hours) in the ODWOs is 500 organisms per mL (based on a geometric mean of 5 or more samples). High Standard Plate Counts were present in the June treated water sample.

Guidelines for bacteriological sampling and testing of a supply are developed to maintain a proper supervision of its bacteriological quality; the routine monitoring program usually requires the taking of multiple samples in a given system. Full interpretation of bacteriological quality cannot be made on the basis of single samples. Further, bacteriological limits were developed in acknowledgement that the presence of coliforms may be

detected due to their non-uniform distribution throughout the distribution system and the fact that their enumeration is subject to considerable variation. For these reasons, the occasional finding of low numbers of coliform organisms is not unexpected. Routine bacteriological monitoring, as outlined in the ODWOs is carried out by the operating authority.

Inorganic and Physical Parameters

Laboratory and Field Chemistry

Turbidity in water is caused by the presence of suspended matter such as clay, silt, colloidal particles, plankton and other microscopic organisms. The most important potential health effect of Turbidity is its interference with disinfection in the treatment plant and the maintenance of a chlorine residual. The ODWO of 1 Formazin Turbidity Unit (FTU) is only applicable to treated water leaving the plant. The ODWO was exceeded in the treated water in April with a laboratory turbidity value of 1.8 FTU and a field turbidity value of 2.8 FTU and in August with a laboratory turbidity value of 1.08 FTU. The field turbidity value for August did not confirm that the ODWO was exceeded. The District Officer was notified in April and August.

The discrepancy between laboratory and field turbidity values which has been observed at other DWSP locations is being investigated.

Colour was above the aesthetic ODWO of 5.0 True Colour Units (TCU) twice in the treated water and twice in the Site 1 water samples. Colour in drinking water may be due to the presence of natural or synthetic organic substances as well as certain metallic ions.

The Langelier Index is used extensively in estimating the corrosion potential of water. An increasingly negative index indicates the increasing possibility of corrosion. It is considered sound engineering practice to maintain a slightly positive Langelier Index. The Langelier Index for the Deseronto water is mostly positive.

It is desirable that the Temperature of drinking water be less than 15°C; the palatability of water is enhanced by its coolness. A temperature below 15°C will tend to reduce the growth of nuisance organisms and hence minimize associated taste, colour, odour and corrosion problems. The temperature of the delivered water may increase in the distribution system due to the warming effect of the soil in late summer and fall and/or as a result of higher temperatures in the source water. The desired ODWO was exceeded sixteen times in the treated water and free flow distributed water.

The Ammonium value in the August Site 1 water sample of .052 mg/L was above the European Economic Community (EEC) Aesthetic guideline level of .05 mg/L but was well below the EECs Maximum Admissable Concentration of .50 mg/L which is set as a result of the concern

for potential sewage pollution and its detection.

Metals

The results reported for the Metals scan were below any applicable health related ODWOs.

Iron, Uranium and Manganese levels were lower in the treated water as compared to the raw water. This is a result of the treatment process. The addition of Alum as a coagulant to the raw water (Table 3) and the resulting coagulation/settling process has been shown to reduce the levels of most metals.

Elevated levels of Copper, Iron, Nickel, Lead and Zinc were detected in the standing samples as compared to the free flow distribution samples thus, indicating that small quantities of these metals were leached from the household plumbing as the water stood overnight. Although the Langelier Index indicates minimal potential for corrosion some metals will be leached in standing samples in most supplies.

At present, there is no evidence that Aluminum is physiologically harmful and no health limit for drinking water has been specified. The measure of residual Aluminum in the treated water is important to indicate the efficiency of the treatment process. The ODWOs indicate that a useful guideline is to maintain a residual below 100 ug/L as Al in the water leaving the plant to avoid problems in

the distribution system. Aluminum values exceeded the ODWO operational guideline five times in the treated water.

Organic Parmaeters

Chloroaromatics

The results of the Chloroaromatics scan showed that no Chloroaromatics were detected.

Chlorophenols

The results of the Chlorophenols scan showed that one Chlorophenol was detected:

2,4,6-Trichlorophenol

2,4,6-Trichlorophenol was detected at a trace level, in one treated water sample.

Pesticides and PCB (Polychlorinated Biphenyl)

The results of the Pesticides and PCB scan showed that no PCBs were detected and that two pesticides were detected:

Alpha BHC

Lindane

There are several isomers of BHC (Benzene Hexachloride); gamma BHC is the active ingredient of the pesticide Lindane, while alpha BHC is the predominant isomer found in surface waters from the Great

Lakes Basin as indicated by results from other water supplies on DWSP.

Alpha BHC was detected at trace levels, three times in the raw water, twice in the treated water and the Site 1 water sample.

Lindane was detected at trace levels, once in the raw water and once in the Site 1 water.

Specific Pesticides

Results of the Specific Pesticides scan showed that no Specific Pesticides were detected.

Phenolics

The maximum desirable concentration of phenolic substances in drinking water is 2.0 ug/L. This limit has been set primarily to prevent the occurrence of undesirable tastes and odours, particularly in chlorinated water. Phenolics were detected in the raw and treated water at levels ranging from 1.2 ug/L to 3.0 ug/L. Phenolics were detected at trace levels, twice in the raw water and five times in the treated water. Phenolic compounds are present in the aquatic environment as a result of natural and/or industrial processes.

Polynuclear Aromatic Hydrocarbons (PAHs)

The results of the PAH scan showed that no PAHs were detected.

Volatiles

The results of the Volatile scan showed that eight parameters, other than Trihalomethanes(THMs), were detected:

Benzene

Toluene

Ethylbenzene

Meta and Para-Xylene

Ortho-Xylene

Styrene

1,1,1-Trichloroethane

Tetrachloroethylene

Benzene was detected at trace levels, once in the raw and treated water.

Toluene was detected at trace levels, three times in the raw water and twice in the treated. The detection of toluene at low, trace levels is a laboratory artifact derived from the analytical methodology. The purge-and-trap analytical technique depends on the purging of the volatile organics in the water sample with helium gas onto a Tenax trapping column. The volatile materials are subsequently thermally desorbed, separated and quantified. Tenax, a toluene-like polymeric material, tends to decompose sporadically upon heating into toluene and other aromatic componenets (ethylbenzene and xylene) giving instrument blanks in the order of

0.05 ug/L.

The detected trace levels of Styrene are also considered to be laboratory artifacts due to the outgassing of monomeric styrene from the polystyrene shipping containers. The sporadic background levels from this source are in the order of 0.05 ug/L.

Ethylbenzene was detected at trace levels, six times in the treated water and twice in the Site 1 water sample.

Meta and Para-Xylene are measured as one compound, M-Xylene, this was detected at trace levels, twice in the treated water.

Ortho-Xylene (O-Xylene) was detected at trace levels, five times in the treated water.

The volatiles listed above are typically found on an occasional basis at other water supplies included on the DWSP, usually at trace levels.

1,1,1-Trichloroethane was detected at trace levels, once in the raw and treated water.

Tetrachloroethylene (T-Chloroethylene) was detected at trace levels, four times in the treated water and twice in the Site 1 water sample.

THMs are acknowledged to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs.

Chloroform, Chlorodibromomethane, Dichlorobromomethane and Total THMs were always detected in the treated waters. All Total THM occurrences, ranging from 7.4 ug/L to 130.8 ug/L were well below the ODWO of 350 ug/L.

The low levels of THMs for August were a result of chlorinator malfunction, during the weekend, when only a very small amount of chlorine was added. The chlorine residuals were also very low. The reason for the low THMs in January is unknown; results show that substantial amounts of chlorine were present, although at somewhat lower levels than at other times of the year.

CONCLUSIONS

The Deseronto Water Treatment Plant for the sample year of 1988 produced good quality water at the plant and this was maintained in the distribution system.

No health related guidelines, for organic parameters, were exceeded

during 1988.

RECOMMENDATIONS

One recommendation can be made:

1) The modification of equipment design should be considered to monitor and alert for equipment malfunction. Consideration should be given to the installation of sufficient back-up equipment so that interruption of unit processes (eg. chlorination) does not occur.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM DESERONTO WTP SAMPLE DAY CONDITIONS FOR 1988

	SAMPLE DAY CONDITIONS		TREATMENT CHEMICAL DOSAGES (MG/L)			
			POST-CHLORINATION	COAGULATION	COAGULATION AID	POST PH ADJUSTMENT
			CHLORINE	ALUM LIQUID	POLYELECTROLYTE	SODIUM CARBONATE
DATE	RETENTION TIME(HRS)	FLOW (1000 M3)				
JAN 05	.5	.9	1.13	40.00	.10	.50
JAN 22	4.0	.0	1.58	40.00	.10	.
JAN 27	10.4	1.5	2.32	40.00	.10	.50
MAR 08	10.4	1.3	2.44	40.00	.10	.50
MAY 03	10.4	1.1	1.54	40.00	.10	.50
JUN 07	11.5	1.4	1.61	40.00	1.00	.50
JUL 05	10.4	1.8	1.54	40.00	.10	.50
AUG 03	11.5	1.8	.	40.00	.08	.50
SEP 07	11.5	1.4	.	40.00	.08	.50
OCT 04	11.5	1.2	1.84	40.00	.07	.50
NOV 08	10.4	1.1	1.90	40.00	.07	.50
DEC 06	10.4	1.1	1.99	40.00	.07	.50

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM DESERONTO

SUMMARY TABLE OF RESULTS (1988)

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	AEROMONAS SP	.	.	.	2	1	0	.	.	.
	E. COLI P/A	.	.	.	2	0	0	.	.	.
	FECAL COLIFORM MF	13	5	0	.	.	.	.	.	.
	FECAL COLIFORM	.	.	.	2	0	0	.	.	.
	STANDRD PLATE CNT MF	7	7	0	11	9	0	10	8	0
	P/A BOTTLE	.	.	.	9	2	0	8	0	0
	STAPH AUREUS	.	.	.	2	0	0	.	.	.
	COLIFORM	.	.	.	2	1	0	.	.	.
	TOTAL COLIFORM MF	12	12	0	13	1	0	12	0	0
	T COLIFORM BCKGRD MF	13	13	0	13	5	0	12	3	0
*TOTAL SCAN BACTERIOLOGICAL		45	37	0	56	19	0	42	11	0
*TOTAL GROUP BACTERIOLOGICAL		45	37	0	56	19	0	42	11	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	.	.	.	10	10	0	22	22	0
	FLD CHLORINE FREE	.	.	.	11	11	0	21	21	0
	FLD CHLORINE (TOTAL)	.	.	.	11	11	0	22	22	0
	FLD PH	13	13	0	13	13	0	24	24	0
	FLD TEMPERATURE	13	13	0	13	13	0	24	24	0
	FLD TURBIDITY	13	13	0	13	13	0	2	2	0
*TOTAL SCAN CHEMISTRY (FLD)		39	39	0	71	71	0	115	115	0
CHEMISTRY (LAB)	ALKALINITY	12	12	0	13	13	0	24	24	0

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
CHEMISTRY (LAB)	CALCIUM	12	12	0	13	13	0	24	24	0
	CYANIDE	13	0	0	13	0	0	12	0	0
	CHLORIDE	12	12	0	13	13	0	24	24	0
	COLOUR	12	12	0	13	8	5	24	19	5
	CONDUCTIVITY	12	12	0	13	13	0	24	24	0
	FLUORIDE	12	11	1	13	11	2	24	22	2
	HARDNESS	12	12	0	13	13	0	24	24	0
	IONCAL	13	5	0	13	5	0	24	10	0
	LANGELIERS INDEX	12	12	0	10	10	0	20	20	0
	MAGNESIUM	12	12	0	13	13	0	24	24	0
	SODIUM	12	12	0	13	13	0	24	24	0
	AMMONIUM TOTAL	12	10	2	13	8	5	24	21	3
	NITRITE	12	11	0	13	1	11	24	3	20
	TOTAL NITRATES	12	11	1	13	13	0	24	24	0
	NITROGEN TOT KJELD	12	12	0	13	12	1	24	23	1
	PH	12	12	0	13	13	0	24	24	0
	PHOSPHORUS FIL REACT	12	6	6	13	1	12	.	.	.
	PHOSPHORUS TOTAL	12	12	0	13	0	12	.	.	.
	TOTAL SOLIDS	1	1	0	1	1	0	2	2	0
	SULPHATE	5	5	0	5	5	0	10	10	0
	TURBIDITY	12	12	0	13	13	0	24	24	0
*TOTAL SCAN CHEMISTRY (LAB)		248	216	10	263	192	48	428	370	31
METALS	SILVER	13	0	2	13	0	5	24	0	14
	ALUMINUM	13	13	0	13	13	0	24	24	0
	ARSENIC	13	9	4	13	1	12	24	3	21
	BARIUM	13	13	0	13	13	0	24	24	0
	BORON	13	2	11	13	5	8	24	4	20
	BERYLLIUM	13	0	7	13	0	9	24	0	7
	CADMIUM	13	0	2	13	0	1	24	0	8

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
METALS	COBALT	13	0	12	13	0	12	24	0	22
	CHROMIUM	13	4	9	13	8	2	24	5	16
	COPPER	13	5	8	13	3	10	24	24	0
	IRON	13	13	0	13	1	11	24	11	11
	MERCURY	12	7	4	12	6	4	12	4	7
	MANGANESE	13	13	0	13	13	0	24	24	0
	MOLYBDENUM	13	0	13	13	2	11	24	3	21
	NICKEL	13	3	7	13	2	8	24	12	9
	LEAD	13	13	0	13	10	2	24	23	1
	ANTIMONY	13	5	8	13	5	8	24	10	14
	SELENIUM	13	0	10	13	0	10	24	0	20
	STRONTIUM	13	13	0	13	13	0	24	24	0
	TITANIUM	13	13	0	13	12	1	24	22	2
	THALLIUM	13	0	5	13	0	2	24	0	5
	URANIUM	13	13	0	13	3	8	24	4	14
	VANADIUM	13	6	7	13	1	12	24	4	20
	ZINC	13	13	0	13	11	2	24	24	0
*TOTAL SCAN METALS		311	158	109	311	122	138	564	249	232
*TOTAL GROUP INORGANIC & PHYSICAL		598	413	119	645	385	186	1107	734	263
CHLOROAROMATICS	HEXACHLOROBUTADIENE	12	0	0	13	0	0	12	0	0
	123 TRICHLOROBENZENE	12	0	0	13	0	0	12	0	0
	1234 T-CHLOROBENZENE	12	0	0	13	0	0	12	0	0
	1235 T-CHLOROBENZENE	12	0	0	13	0	0	12	0	0
	124 TRICHLOROBENZENE	12	0	0	13	0	0	12	0	0
	1245 T-CHLOROBENZENE	12	0	0	13	0	0	12	0	0
	135 TRICHLOROBENZENE	12	0	0	13	0	0	12	0	0
	HCB	12	0	0	13	0	0	12	0	0
	HEXACHLOROETHANE	12	0	0	13	0	0	12	0	0
	OCTACHLOROSTYRENE	12	0	0	13	0	0	12	0	0

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
CHLOROAROMATICS	PENTACHLOROBENZENE	12	0	0	13	0	0	12	0	0
	236 TRICHLOROTOLUENE	12	0	0	13	0	0	12	0	0
	245 TRICHLOROTOLUENE	12	0	0	13	0	0	12	0	0
	26A TRICHLOROTOLUENE	12	0	0	13	0	0	12	0	0
*TOTAL SCAN CHLOROAROMATICS		168	0	0	182	0	0	168	0	0
CHLOROPHENOLS	234 TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.
	2345 T-CHLOROPHENOL	2	0	0	2	0	0	.	.	.
	2356 T-CHLOROPHENOL	2	0	0	2	0	0	.	.	.
	245-TRICHLOROPHENOL	2	0	0	2	0	0	.	.	.
	246-TRICHLOROPHENOL	2	0	0	2	0	1	.	.	.
	PENTACHLOROPHENOL	2	0	0	2	0	0	.	.	.
*TOTAL SCAN CHLOROPHENOLS		12	0	0	12	0	1	0	0	0
PAH	PHENANTHRENE	13	0	0	13	0	0	.	.	.
	ANTHRACENE	13	0	0	13	0	0	.	.	.
	FLUORANTHENE	13	0	0	13	0	0	.	.	.
	PYRENE	13	0	0	13	0	0	.	.	.
	BENZO(A)ANTHRACENE	13	0	0	13	0	0	.	.	.
	CHRYSENE	13	0	0	13	0	0	.	.	.
	DIMETH. BENZ(A)ANTHR	13	0	0	13	0	0	.	.	.
	BENZO(E) PYRENE	13	0	0	13	0	0	.	.	.
	BENZO(J) FLUORANTHEN	0	0	0	0	0	0	.	.	.
	BENZO(B) FLUORANTHEN	13	0	0	13	0	0	.	.	.
	PERYLENE	13	0	0	13	0	0	.	.	.
	BENZO(K) FLUORANTHEN	13	0	0	13	0	0	.	.	.
	BENZO(A) PYRENE	13	0	0	13	0	0	.	.	.
	BENZO(G,H,I) PERYLEN	13	0	0	13	0	0	.	.	.

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PAH	DIBENZO(A,H) ANTHRAC	13	0	0	13	0	0	.	.	.
	INDENO(1,2,3-C,D) PY	13	0	0	13	0	0	.	.	.
	BENZO(B) CHRYSENE	13	0	0	13	0	0	.	.	.
	ANTHANTHRENE	0	0	0	0	0	0	.	.	.
	CORONENE	13	0	0	13	0	0	.	.	.
*TOTAL SCAN PAH		221	0	0	221	0	0	0	0	0
PESTICIDES & PCB	ALDRIN	12	0	0	13	0	0	12	0	0
	ALPHA BHC	12	0	3	13	0	2	12	0	3
	BETA BHC	12	0	0	13	0	0	12	0	0
	LINDANE	12	0	1	13	0	0	12	0	1
	ALPHA CHLORDANE	12	0	0	13	0	0	12	0	0
	GAMMA CHLORDANE	12	0	0	13	0	0	12	0	0
	DIELDRIN	12	0	0	13	0	0	12	0	0
	METHOXYCHLOR	12	0	0	13	0	0	12	0	0
	ENDOSULFAN 1	12	0	0	13	0	0	12	0	0
	ENDOSULFAN II	12	0	0	13	0	0	12	0	0
	ENDRIN	12	0	0	13	0	0	12	0	0
	ENDOSULFAN SULPHATE	12	0	0	13	0	0	12	0	0
	HEPTACHLOR EPOXIDE	12	0	0	13	0	0	12	0	0
	HEPTACHLOR	12	0	0	13	0	0	12	0	0
	MIREX	12	0	0	13	0	0	12	0	0
	OXYCHLORDANE	12	0	0	13	0	0	12	0	0
	OPDDT	12	0	0	13	0	0	12	0	0
	PCB	12	0	0	13	0	0	12	0	0
	DDD	12	0	0	13	0	0	12	0	0
	PPDDE	12	0	0	13	0	0	12	0	0
	PPDDT	12	0	0	13	0	0	12	0	0
	AMETRINE	13	0	0	13	0	0	12	0	0
	ATRAZINE	13	0	0	13	0	0	12	0	0

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	ATRATONE	13	0	0	13	0	0	12	0	0
	CYANAZINE	13	0	0	13	0	0	12	0	0
	DES ETHYL ATRAZINE	6	0	0	6	0	0	6	0	0
	DES ETHYL SIMAZINE	6	0	0	6	0	0	6	0	0
	PROMETONE	13	0	0	13	0	0	12	0	0
	PROPAZINE	13	0	0	13	0	0	12	0	0
	PROMETRYNE	13	0	0	13	0	0	12	0	0
	METRIBUZIN	13	0	0	13	0	0	12	0	0
	SIMAZINE	13	0	0	13	0	0	12	0	0
	ALACHLOR	13	0	0	13	0	0	12	0	0
	METOLACHLOR	13	0	0	13	0	0	12	0	0
*TOTAL SCAN PESTICIDES & PCB		407	0	4	428	0	2	396	0	4
PHENOLICS	PHENOLICS	13	7	2	13	4	5	.	.	.
*TOTAL SCAN PHENOLICS		13	7	2	13	4	5	0	0	0
SPECIFIC PESTICIDES	TOXAPHENE	0	0	0	0	0	0	0	0	0
	2,4,5-T	2	0	0	2	0	0	.	.	.
	2,4-D	2	0	0	2	0	0	.	.	.
	24DCHLRPHENOXYBUTYRC	2	0	0	2	0	0	.	.	.
	2,4 D PROPIONIC ACID	2	0	0	2	0	0	.	.	.
	DICAMBA	2	0	0	2	0	0	.	.	.
	PICHLORAM	0	0	0	0	0	0	.	.	.
	SILVEX	2	0	0	2	0	0	.	.	.
	DIAZINON	2	0	0	2	0	0	.	.	.
	DICHLOROVOS	2	0	0	2	0	0	.	.	.
	CHLORPYRIFOS	2	0	0	2	0	0	.	.	.
	ETHION	2	0	0	2	0	0	.	.	.

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
SPECIFIC PESTICIDES	AZINPHOS-METHYL	0	0	0	0	0	0	.	.	.
	MALATHION	2	0	0	2	0	0	.	.	.
	MEVINPHOS	2	0	0	2	0	0	.	.	.
	METHYL PARATHION	2	0	0	2	0	0	.	.	.
	METHYLTRITHION	2	0	0	2	0	0	.	.	.
	PARATHION	2	0	0	2	0	0	.	.	.
	PHORATE	2	0	0	2	0	0	.	.	.
	RELDAN	2	0	0	2	0	0	.	.	.
	RONNEL	2	0	0	2	0	0	.	.	.
	AMINOCARB	0	0	0	0	0	0	.	.	.
	BENOMYL	2	0	0	2	0	0	.	.	.
	BUX	2	0	0	2	0	0	.	.	.
	CARBOFURAN	2	0	0	2	0	0	.	.	.
	CICP	2	0	0	2	0	0	.	.	.
	DIALLATE	2	0	0	2	0	0	.	.	.
	EPTAM	2	0	0	2	0	0	.	.	.
	IPC	2	0	0	2	0	0	.	.	.
	PROPOXUR	2	0	0	2	0	0	.	.	.
	CARBARYL	2	0	0	2	0	0	.	.	.
	BUTYLATE	2	0	0	2	0	0	.	.	.
*TOTAL SCAN SPECIFIC PESTICIDES		56	0	0	56	0	0	0	0	0
VOLATILES	BENZENE	10	0	1	10	0	1	9	0	0
	TOLUENE	10	0	0	10	0	3	9	0	2
	ETHYLBENZENE	10	0	0	10	0	6	9	0	2
	P-XYLENE	10	0	0	10	0	0	9	0	0
	M-XYLENE	10	0	0	10	0	2	9	0	0
	O-XYLENE	10	0	0	10	0	5	9	0	0
	STYRENE	3	0	0	3	0	1	3	0	0
	1,1 DICHLOROETHYLENE	10	0	0	10	0	0	9	0	0

SCAN	PARAMETER	RAW			TREATED			SITE 1		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
VOLATILES	METHYLENE CHLORIDE	10	0	0	10	0	0	9	0	0
	T1,2DICHLOROETHYLENE	10	0	0	10	0	0	9	0	0
	1,1 DICHLOROETHANE	10	0	0	10	0	0	9	0	0
	CHLOROFORM	10	0	6	10	9	1	9	9	0
	111, TRICHLOROETHANE	10	0	1	10	0	1	9	0	0
	1,2 DICHLOROETHANE	10	0	0	10	0	0	9	0	0
	CARBON TETRACHLORIDE	10	0	0	10	0	0	9	0	0
	1,2 DICHLOROPROPANE	10	0	0	10	0	0	9	0	0
	TRICHLOROETHYLENE	10	0	0	10	0	0	9	0	0
	DICHLOROBROMOMETHANE	10	0	4	10	9	0	9	9	0
	112 TRICHLOROETHANE	10	0	0	10	0	0	9	0	0
	CHLORODIBROMOMETHANE	10	0	2	10	4	5	9	3	5
	T-CHLOROETHYLENE	10	0	0	10	0	4	9	0	2
	BROMOFORM	10	0	0	10	0	0	9	0	0
	1122 T-CHLOROETHANE	10	0	0	10	0	0	9	0	0
	CHLOROBENZENE	10	0	0	10	0	0	9	0	0
	1,4 DICHLOROBENZENE	10	0	0	10	0	0	9	0	0
	1,3 DICHLOROBENZENE	10	0	0	10	0	0	9	0	0
	1,2 DICHLOROBENZENE	10	0	0	10	0	0	9	0	0
	TRIFLUOROCHLOROTOLUE	4	0	0	4	0	0	3	0	0
	ETHLYENE DIBROMIDE	10	0	0	10	0	0	9	0	0
	TOTL TRIHALOMETHANES	10	1	2	10	10	0	9	8	1
*TOTAL SCAN VOLATILES		287	1	16	287	32	29	258	29	12
*TOTAL GROUP ORGANIC		1164	8	22	1199	36	37	822	29	16
TOTAL		1807	458	141	1900	440	223	1971	774	279

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)
1. Maximum Acceptable Concentration (MAC)
1+. MAC for Total Trihalomethanes
1*. MAC for Bacteriological Analyses
Poor water quality is indicated when :
- total coliform counts > 0 < 5
- P/A Bottle Test is present after 48 hours
- Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
- Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
- Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours
2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)
1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, the AO is a total)

C WORLD HEALTH ORGANIZATION (WHO)
1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria

F EUROPEAN ECONOMIC COMMUNITY (EEC)
1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:
1. Exclude the low-level data because of this uncertainty factor. However, studies of long-term environmental trends and modelling may be adversely affected by exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported qualified by the code "<T". Results quantified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. However the average of such data is still only an estimate of the amount of substance present subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!AW	No Data: Analysis Withdrawn
!CR	No Data: Could Not Confirm By Reanalysis
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IS	No Data: Insufficient Sample
!LA	No Data: Laboratory Accident

!LD	No Data: Test Queued After Sample Discarded
!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!QU	No Data: Quality Control Unacceptable
!PE	No Data: Procedural Error - Sample Discarded
!PH	No Data: Sample pH Outside Valid Range
!RE	No Data: Received Empty
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only
PPS	Test Performed On Preserved Sample
RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UAL	Unreliable: Sample Age Exceeds Normal Limit
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours
T# (T06)	Result Taken After # Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM DESERONTO 1988

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
BACTERIOLOGICAL				
AEROMONAS SP (0=ABSENT)		DET'N LIMIT = N/A		GUIDELINE = 0 (A1)
JAN	.	0	.	.
AUG	.	1	.	.
E. COLI P/A (0=ABSENT)		DET'N LIMIT = N/A		GUIDELINE = N/A
JAN	.	0	.	.
AUG	.	0	.	.
FECAL COLIFORM MF (CT/100ML)		DET'N LIMIT = 0		GUIDELINE = 0 (A1)
JAN	0	.	.	.
	0	.	.	.
	1	.	.	.
MAR	0	.	.	.
APR	0	.	.	.
MAY	0	.	.	.
JUN	0	.	.	.
JUL	0	.	.	.
AUG	0	.	.	.
SEP	12	.	.	.
OCT	9 T48	.	.	.
NOV	5 T48	.	.	.
DEC	7 T48	.	.	.
FECAL COLIFORM (0=ABSENT)		DET'N LIMIT = N/A		GUIDELINE = 0 (A1)
JAN	.	0	.	.
AUG	.	0	.	.
STANDRD PLATE CNT MF (CT/ML)		DET'N LIMIT = 0		GUIDELINE = 500/ML (A1)
JAN	190	123	.	1
	!AW	!AW	.	!AW
	93	24	.	.
MAR	79	5	.	2
APR	550	26	.	4
MAY	550	14	.	3
JUN	2400 >	2400 >	.	134
JUL	2400 >	129	.	38
AUG	!AW	!AW	.	!AW
SEP	.	43	.	1
OCT	.	12 T48	.	17 T24
NOV	.	0 <=>	.	0 <=>

	WATER TREATMENT PLANT			DISTRIBUTION SYSTEM
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
DEC	.	0 <=>	.	2 <=>
P/A BOTTLE (0=ABSENT)		DET'N LIMIT = 0		GUIDELINE = 0 (A1*)
JAN	.	0	.	0
	.	0	.	0
	.	1	.	.
MAR	.	0	.	0
APR	.	0	.	0
MAY	.	0	.	0
JUN	.	0	.	0
JUL	.	0	.	0
AUG	.	1	.	0
STAPH AUREUS (0=ABSENT)		DET N LIMIT = N/A		GUIDELINE = 0 (A1)
JAN	.	0	.	.
AUG	.	0	.	.
COLIFORM (0=ABSENT)		DET'N LIMIT = N/A		GUIDELINE = 0 (A1)
JAN	.	1	.	.
AUG	.	0	.	.
TOTAL COLIFORM MF (CT/100ML)		DET'N LIMIT = 0		GUIDELINE = 5/100ML(A1)
JAN	59 A3C	0	.	0
	53 A3C	0	.	0
	120	24	.	.
MAR	18 A3C	0	.	0
APR	1100	0	.	0
MAY	4 A3C	0	.	0
JUN	2 A3C	0	.	0
JUL	4 A3C	0	.	0
AUG	TOP	0	.	0
SEP	150 A3C	0	.	0
OCT	22 A3C	0 T48	.	0 T24
NOV	44 A3C	0 T24	.	0 T24
DEC	52 T48	0 T48	.	0 T24
T COLIFORM BCKGRD MF (CT/100ML)		DET'N LIMIT = 0		GUIDELINE = N/A
JAN	780	0	.	0
	720	1	.	1
	840	5	.	.
MAR	1280	0	.	0
APR	3200	0	.	0
MAY	18000	0	.	0
JUN	60000	47	.	3
JUL	4800 >	1	.	0

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
AUG	40000 >	1500	.	1600
SEP	10000	0	.	0
OCT	4800 >	0 T48	.	0 T24
NOV	9600 >	0 T24	.	0 T24
DEC	1040 T48	0 T48	.	0 T24

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
CHEMISTRY (FLD)				
FLD CHLORINE (COMB) (MG/L)			DET'N LIMIT = N/A	GUIDELINE = N/A
JAN	.	.100	.200	.200
	.	.400	.300	.200
MAR	.	.400	.100	.300
APR	.	.800	.100	.200
MAY	.	.400	.100	.400
JUN	.	.	.100	.200
JUL	.	.100	.100	.400
SEP	.	.200	.100	.300
OCT	.	.400	.100	.400
NOV	.	.400	.100	.300
DEC	.	.600	.200	.200
FLD CHLORINE FREE (MG/L)			DET'N LIMIT = N/A	GUIDELINE = N/A
JAN	.	.300	.200	.600
	.	.400	.100	.400
MAR	.	.800	.100	.700
APR	.	1.100	.100	.500
MAY	.	.800	.100	.600
JUN	.	.900	.300	.800
JUL	.	1.000	.	.600
SEP	.	.800	.100	.500
OCT	.	.600	.100	.600
NOV	.	.400	.100	.500
DEC	.	.500	.200	.800
FLD CHLORINE (TOTAL) (MG/L)			DET'N LIMIT = N/A	GUIDELINE = N/A
JAN	.	.400	.400	.800
	.	.800	.400	.600
MAR	.	1.200	.200	1.000
APR	.	1.900	.200	.700
MAY	.	1.200	.200	1.000
JUN	.	.900	.400	1.000
JUL	.	1.100	.100	1.000
SEP	.	1.000	.200	.800
OCT	.	1.000	.200	1.000
NOV	.	.800	.200	.800
DEC	.	1.100	.400	1.000
FLD PH (DIMENSIONLESS)			DET'N LIMIT = N/A	GUIDELINE = 6.5-8.5(A4)
JAN	7.800	7.600	7.400	7.200
	7.600	7.100	7.400	7.200
	7.700	7.300	.	.
MAR	7.700	7.550	7.200	7.400
APR	7.500	6.900	7.700	7.000
MAY	7.800	7.200	7.400	7.400

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
JUN	8.200	7.300	7.200	7.400
JUL	8.300	7.050	7.400	7.500
AUG	7.900	7.100	7.400	7.200
SEP	8.650	7.740	7.300	7.200
OCT	8.100	7.040	7.400	7.200
NOV	7.940	6.950	7.400	7.200
DEC	7.670	6.640	7.100	7.000
FLD TEMPERATURE (DEG.C)			DET'N LIMIT = N/A	GUIDELINE = 15 (A1)
JAN	3.000	5.000	19.000	5.000
	1.000	2.000	18.000	4.000
	1.000	2.000	.	.
MAR	4.000	4.000	18.000	4.000
APR	6.500	6.500	18.000	7.000
MAY	10.000	10.000	16.000	10.000
JUN	17.000	17.000	20.000	18.000
JUL	18.000	18.000	20.000	20.000
AUG	26.000	26.000	25.000	25.000
SEP	19.000	20.000	18.000	20.000
OCT	16.000	16.000	17.000	18.000
NOV	8.000	8.000	19.000	10.000
DEC	3.000	4.000	18.000	7.000
FLD TURBIDITY (FTU)			DET'N LIMIT = N/A	GUIDELINE = 1.0 (A1)
JAN	.900	.200	.	.
	1.200	.400	.	.
	.900	.300	.	.
MAR	1.000	.600	.	.
APR	3.000	2.800	2.300	1.100
MAY	2.500	.500	.	.
JUN	2.200	.200	.	.
JUL	3.600	.300	.	.
AUG	5.600	.500	.	.
SEP	6.900	.700	.	.
OCT	5.000	.300	.	.
NOV	3.700	.300	.	.
DEC	4.000	.200	.	.

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
CHEMISTRY (LAB)				
ALKALINITY (MG/L)			DET'N LIMIT = .200	GUIDELINE = 30-500 (A4)
JAN	115.300	98.100	97.000	96.300
	114.100	98.400	98.600	98.100
	111.600	97.400	.	.
MAR	110.200	88.400	90.600	90.700
APR	94.000	75.600	76.100	75.300
MAY	IIS	79.400	79.100	78.300
JUN	106.500	87.300	87.200	87.300
JUL	109.000	87.900	88.700	88.600
AUG	103.600	93.000	87.800	90.400
SEP	98.600	78.700	79.100	78.400
OCT	104.600	84.800	85.000	85.400
NOV	106.700	86.500	87.500	86.200
DEC	112.100	91.000	90.900	91.100
CALCIUM (MG/L)			DET'N LIMIT = .100	GUIDELINE = 100 (F2)
JAN	44.400	43.800	44.000	43.800
	46.200	45.800	47.000	46.600
	45.800	45.800	.	.
MAR	40.000	39.800	41.000	39.400
APR	36.800	35.400	37.400	38.000
MAY	IIS	36.400	36.600	36.800
JUN	40.400	40.400	39.800	40.800
JUL	41.800	42.800	42.400	41.800
AUG	39.900	39.100	38.300	39.000
SEP	39.000	39.600	38.200	38.200
OCT	41.600	42.200	42.800	42.600
NOV	40.400	40.000	39.600	39.400
DEC	42.400	43.800	41.200	40.600
CHLORIDE (MG/L)			DET'N LIMIT = .200	GUIDELINE = 250 (A3)
JAN	9.500	10.700	11.400	11.300
	9.800	11.600	11.700	11.500
	9.300	9.300	.	.
MAR	11.600	14.500	14.300	14.100
APR	7.400	10.200	10.800	10.200
MAY	IIS	9.100	9.400	9.200
JUN	10.600	10.900	11.400	11.300
JUL	11.100	12.600	13.100	12.700
AUG	11.400	12.100	12.000	11.900
SEP	11.800	12.900	13.400	13.100
OCT	10.200	11.800	12.300	12.000
NOV	12.000	13.500	14.000	13.600
DEC	11.000	12.500	12.800	13.000
COLOUR (TCU)			DET'N LIMIT = .5	GUIDELINE = 5.0 (A3)
JAN	18.000	5.000	5.500	4.500

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
JAN	18.500	5.000	7.000	5.500
	19.500	6.500	.	.
MAR	20.000	3.500	6.500	4.000
APR	23.500	5.500	11.000	5.500
MAY	11S	3.500	10.000	3.000
JUN	14.000	1.500	2.500	1.000
JUL	12.000	.500 <T	5.500	.500 <T
AUG	12.000	2.500	6.500	3.000
SEP	12.000	.500 <T	6.500 RRV	.500 <T
OCT	13.000	1.500 <T	7.500	1.500 <T
NOV	13.500	1.500 <T	5.500	1.500 <T
DEC	13.000	2.000 <T	3.500	2.000 <T
CONDUCTIVITY (UMHO/CM)			DET'N LIMIT = 1	GUIDELINE = 400 (F2)
JAN	283	289	290	287
	283	294	288	291
	282	288	.	.
MAR	276	284	289	285
APR	230	242	245	242
MAY	11S	249	250	247
JUN	269	279	279	279
JUL	265	278	271	263
AUG	264	270	270	268
SEP	262	273	274	268
OCT	260	272	273	273
NOV	269	281	284	280
DEC	283	294	294	294
FLUORIDE (MG/L)			DET'N LIMIT = .01	GUIDELINE = 2.400 (A1)
JAN	.040 <T	.040 <T	.040 <T	.040 <T
	.080	.060	.080	.060
	.080	.040 <T	.	.
MAR	.080	.070	.080	.070
APR	.060	.050	.050	.050
MAY	11S	.060	.060	.060
JUN	.080	.060	.060	.060
JUL	.120	.100	.090	.080
AUG	.100	.090	.080	.090
SEP	.080	.060	.060	.080
OCT	.100	.080	.080	.080
NOV	.100	.060	.080	.080
DEC	.100	.060	.060	.060
HARDNESS (MG/L)			DET'N LIMIT = .500	GUIDELINE = 80-100 (A4)
JAN	131.000	130.000	131.000	130.000
	136.000	134.000	137.000	137.000
	134.000	134.000	.	.

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
MAR	120.000	119.000	122.000	118.000
APR	108.000	103.000	109.000	110.000
MAY	115	105.000	107.000	107.000
JUN	121.000	120.000	119.000	122.000
JUL	124.000	127.000	126.000	125.000
AUG	119.700	117.700	115.700	117.500
SEP	118.000	119.000	116.000	116.000
OCT	124.000	126.000	127.000	127.000
NOV	122.000	121.000	120.000	119.000
DEC	128.000	132.000	126.000	124.000
IONCAL (DMSNLESS)		DET'N LIMIT = N/A		GUIDELINE = N/A
JAN	.000 NAF	.000 NAF	.000 NAF	.000 NAF
	.000 NAF	.000 NAF	.000 NAF	.000 NAF
	.000 NAF	.000 NAF	.	.
MAR	.000 NAF	.000 NAF	.000 NAF	.000 NAF
APR	.000 NAF	.000 NAF	.000 NAF	.000 NAF
MAY	.000 NAF	.000 NAF	.000 NAF	.000 NAF
JUN	.000 NAF	.000 NAF	.000 NAF	.000 NAF
JUL	.000 NAF	.000 NAF	.000 NAF	.000 NAF
AUG	1.317	4.561	5.935	1.765
SEP	1.679	1.291	1.317	.693
OCT	4.037	4.031	4.718	4.525
NOV	.439	.885	3.299	1.976
DEC	3.790	3.201	9.333	11.450
LANGELIERS INDEX (DMSNLESS)		DET'N LIMIT = N/A		GUIDELINE = N/A
JAN	.527 NAF	.258 NAF	.325 NAF	.311 NAF
	.300 NAF	-.103 NAF	.352 NAF	.185 NAF
	.486 NAF	.195 NAF	.	.
MAR	.355 NAF	.034 NAF	.035 NAF	-.120 NAF
APR	.077 NAF	-.129 NAF	-.073 NAF	-.320 NAF
MAY	.	.102 NAF	.152 NAF	.131 NAF
JUN	.577 NAF	.377 NAF	.290 NAF	.241 NAF
JUL	.413 NAF	.105 NAF	.178 NAF	.144 NAF
AUG	.341	.173	.129	.111
SEP	.471	.265	.281	.090
OCT	.535	.356	.362	.372
NOV	.428	-.162	.017	-.120
DEC	.645	.404	.397	.401
MAGNESIUM (MG/L)		DET'N LIMIT = .050		GUIDELINE = 30 (F2)
JAN	4.900	5.100	5.000	5.000
	5.000	4.900	4.700	4.900
	4.700	4.800	.	.
MAR	4.900	4.900	4.900	4.800
APR	3.900	3.700	3.800	3.600

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
MAY	IIS	3.500	3.600	3.700
JUN	4.900	4.600	4.800	4.800
JUL	4.800	4.800	5.000	4.900
AUG	4.900	4.900	4.900	4.900
SEP	5.100	4.900	5.000	4.900
OCT	4.900	5.000	4.900	4.900
NOV	5.100	5.100	5.100	5.000
DEC	5.400	5.500	5.500	5.400
SODIUM (MG/L)		DET'N LIMIT = .200		GUIDELINE = 200 (C3)
JAN	5.600	5.600	5.600	5.600
	5.800	5.800	5.800	5.800
	5.400	5.400	.	.
MAR	6.600	6.600	6.800	6.000
APR	4.600	4.400	4.800	4.600
MAY	IIS	4.200	4.200	4.200
JUN	5.600	5.600	5.800	5.800
JUL	6.000	6.400	6.400	6.200
AUG	6.400	6.600	6.800	6.800
SEP	6.800	6.600	6.800	6.600
OCT	6.800	6.800	6.800	7.200
NOV	6.800	7.000	7.000	7.000
DEC	6.800	7.200	6.800	6.800
AMMONIUM TOTAL (MG/L)		DET'N LIMIT = 0.002		GUIDELINE = .05 (F2)
JAN	.026	.014	.034	.016
	.036	.016	.016	.018
	.012	.018	.	.
MAR	.030	.012	.032	.014
APR	.010	.020	.028	.026
MAY	IIS	.008 <T	.014	.016
JUN	.064	.004 <T	.010	.004 <T
JUL	.060	.010	.022	.012
AUG	.004 <T	.046	.054	.052
SEP	.002 <T	.002 <T	.006 <T	.008 <T
OCT	.056	.008 <T	.022	.010
NOV	.034	.008 <T	.020	.010
DEC	.048	.012	.026	.012
NITRITE (MG/L)		DET'N LIMIT = 0.001		GUIDELINE = 1.000 (A1)
JAN	.013	.002 <T	.002 <T	.001 <T
	.016	.002 <T	.002 <T	.002 <T
	.032	.002 <T	.	.
MAR	.040	.001 <T	.003 <T	.001 <T
APR	.079	.002 <T	.003 <T	.002 <T
MAY	IIS	.001 <T	.002 <T	.003 <T
JUN	.012	BDL	.001 <T	BDL

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
JUL	.007	.001 <T	.002 <T	.001 <T
AUG	BDL	.002 <T	.002 <T	.001 <T
SEP	.079	.001 <T	.003 <T	.002 <T
OCT	.044	.003 <T	.004 <T	.003 <T
NOV	.061	.011	.011	.009
DEC	.009	.004 <T	.005	.004 <T
TOTAL NITRATES (MG/L)		DET'N LIMIT = .020		GUIDELINE = 10.000 (A1)
JAN	.275	.290	.285	.280
	.250	.260	.265	.260
	.305	.280	.	.
MAR	.365	.335	.360	.335
APR	.520	.420	.475	.425
MAY	IIS	.165	.165	.160
JUN	.120	.125	.135	.125
JUL	.035 <T	.130	.145	.130
AUG	.265	.130	.215	.125
SEP	.270	.185	.220	.180
OCT	.140	.130	.165	.125
NOV	.155	.140	.200	.135
DEC	.125	.140	.200	.140
NITROGEN TOT KJELD (MG/L)		DET'N LIMIT = .020		GUIDELINE = N/A
JAN	.440	.290	.410	.310
	.420	.290	.310	.290
	.440	.340	.	.
MAR	.440	.330	.500	.310
APR	.490	.350	.400	.360
MAY	IIS	.240	.300	.260
JUN	.380	.050 <T	.140	.040 <T
JUL	.560	.130	.190	.130
AUG	.540	.270	.350	.330
SEP	.720	.230	.240	.230
OCT	.710	.230	.290	.200
NOV	.720	.260	.290	.240
DEC	.630	.140	.260	.230
PH (DIMENSIONLESS)		DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)
JAN	8.250	8.060	8.130	8.120
	8.010	7.680	8.120	7.960
	8.210	7.980	.	.
MAR	8.140	7.920	7.900	7.760
APR	7.950	7.860	7.890	7.640
MAY	IIS	8.060	8.110	8.090
JUN	8.370	8.260	8.180	8.120
JUL	8.180	7.960	8.030	8.000
AUG	8.150	8.040	8.030	7.990

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
SEP	8.310	8.200	8.230	8.040
OCT	8.320	8.230	8.230	8.240
NOV	8.220	7.730	7.910	7.780
DEC	8.400	8.240	8.260	8.270
PHOSPHORUS FIL REACT (MG/L)		DET'N LIMIT = .0005		GUIDELINE = N/A
JAN	.001 <T	.000 <T	.	.
	.001 <T	.000 <T	.	.
	.002 <T	.001 <T	.	.
MAR	.001 <T	.001 <T	.	.
APR	.005	.001 <T	.	.
MAY	!!S	.000 <T	.	.
JUN	.004	.001 <T	.	.
JUL	.002	.001 <T	.	.
AUG	.008	.001 <T	.	.
SEP	.009	.000 <T	.	.
OCT	.011	.002	.	.
NOV	.001 <T	.000 <T	.	.
DEC	.001 <T	.000 <T	.	.
PHOSPHORUS TOTAL (MG/L)		DET'N LIMIT = .002		GUIDELINE = .40 (F2)
JAN	.012	.004 <T	.	.
	.014	.005 <T	.	.
	.010	.004 <T	.	.
MAR	.016	.006 <T	.	.
APR	.027	.009 <T	.	.
MAY	!!S	.006 <T	.	.
JUN	.028	.004 <T	.	.
JUL	.037	.006 <T	.	.
AUG	.042	.008 <T	.	.
SEP	.048	BDL	.	.
OCT	.052	.008 <T	.	.
NOV	.038	.004 <T	.	.
DEC	.032	.002 <T	.	.
TOTAL SOLIDS (MG/L)		DET'N LIMIT = 1.		GUIDELINE = 500 (A3)
JAN	184 CRO	188 CRO	189 CRO	187 CRO
SULPHATE (MG/L)		DET'N LIMIT = .200		GUIDELINE = 500. (A3)
AUG	14.220	26.670	29.180	26.110
SEP	14.090	32.720	32.290	31.940
OCT	13.500	32.000	31.200	31.900
NOV	12.610	30.020	30.370	29.750
DEC	19.500	41.500	42.000	42.500
TURBIDITY (FTU)		DET'N LIMIT = .02		GUIDELINE = 1.00 (A1)

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
JAN	1.300	.160	.320	.200
	.680	.280	.600	.260
	.740	.140	.	.
MAR	1.020	.220	.480	.200
APR	2.900	1.800	1.600	.700
MAY	115	.360	1.080	.360
JUN	1.900	.340	.450	.240
JUL	3.600	.560	1.600	.390
AUG	4.900	1.080	1.190	.500
SEP	5.700	.470	.950	.370
OCT	8.400	.640	1.100	.570
NOV	6.400	.280	.970	.270
DEC	6.300	.300	.470	.270

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
METALS				
SILVER (UG/L)			DET'N LIMIT = .020	GUIDELINE = 50. (A1)
JAN	BDL	BDL	.150 <T	.030 <T
	BDL	BDL	.020 <T	BDL
	BDL	BDL	.	.
MAR	BDL	BDL	.040 <T	BDL
APR	BDL	BDL	.040 <T	BDL
MAY	BDL	.030 <T	.450 <T	BDL
JUN	BDL	BDL	.050 <T	BDL
JUL	BDL	BDL	BDL	BDL
AUG	.050 <T	.030 <T	.040 <T	BDL
SEP	BDL	.030 <T	.050 <T	.040 <T
OCT	BDL	.030 <T	.070 <T	BDL
NOV	.030 <T	.050 <T	.090 <T	.060 <T
DEC	BDL	BDL	.040 <T	BDL
ALUMINUM (UG/L)			DET'N LIMIT = .050	GUIDELINE = 100.(A4)
JAN	30.000	64.000	53.000	56.000
	26.000	160.000	140.000	130.000
	19.000	88.000	.	.
MAR	56.000	180.000	70.000	97.000
APR	84.000	800.000	500.000	320.000
MAY	34.000	77.000	72.000	88.000
JUN	42.000	120.000	140.000	160.000
JUL	57.000	28.000	38.000	30.000
AUG	49.000	110.000	88.000	98.000
SEP	110.000	41.000	43.000	36.000
OCT	94.000	44.000	43.000	40.000
NOV	75.000	44.000	41.000	40.000
DEC	67.000	24.000	25.000	24.000
ARSENIC (UG/L)			DET'N LIMIT = 0.050	GUIDELINE = 50.0 (A1)
JAN	1.800	.780 <T	.650 <T	.790 <T
	1.500	.920 <T	.760 <T	.800 <T
	1.000	.670 <T	.	.
MAR	.870 <T	.280 <T	.340 <T	.210 <T
APR	.800 <T	.250 <T	.370 <T	.200 <T
MAY	.680 <T	.500 <T	.620 <T	.420 <T
JUN	1.200	.550 <T	.350 <T	.400 <T
JUL	1.200	.260 <T	.380 <T	.380 <T
AUG	3.300	1.300	1.400	1.100
SEP	2.600	.830 <T	1.000 <T	.680 <T
OCT	2.000	.840 <T	1.200	.710 <T
NOV	1.100	.730 <T	.700 <T	.650 <T
DEC	.750 <T	.690 <T	.540 <T	.530 <T
BARIUM (UG/L)			DET'N LIMIT = 0.020	GUIDELINE = 1000. (A1)
JAN	41.000	35.000	36.000	34.000

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
JAN	40.000	36.000	37.000	36.000
	42.000	39.000	.	.
MAR	41.000	38.000	41.000	36.000
APR	34.000	31.000	36.000	29.000
MAY	34.000	31.000	34.000	32.000
JUN	38.000	35.000	50.000	37.000
JUL	36.000	32.000	33.000	32.000
AUG	38.000	37.000	36.000	36.000
SEP	42.000	37.000	37.000	37.000
OCT	45.000	37.000	34.000	37.000
NOV	39.000	36.000	39.000	36.000
DEC	40.000	36.000	37.000	35.000
BORON (UG/L)		DET'N LIMIT = 0.200		GUIDELINE = 5000. (A1)
JAN	11.000 <T	11.000 <T	13.000 <T	11.000 <T
	13.000 <T	12.000 <T	13.000 <T	12.000 <T
	13.300 <T	14.600 <T	.	.
MAR	11.000 <T	11.000 <T	12.000 <T	11.000 <T
APR	10.000 <T	13.000 <T	9.800 <T	9.000 <T
MAY	7.100 <T	6.900 <T	7.300 <T	6.500 <T
JUN	21.000	8.300 <T	5.900 <T	9.500 <T
JUL	17.000 <T	12.000 <T	18.000 <T	12.000 <T
AUG	18.000 <T	42.000	42.000	40.000
SEP	18.000 <T	48.000	19.000 <T	18.000 <T
OCT	17.000 <T	34.000	16.000 <T	17.000 <T
NOV	45.000	42.000	24.000	39.000
DEC	20.000 <T	42.000	17.000 <T	15.000 <T
BERYLLIUM (UG/L)		DET'N LIMIT = 0.010		GUIDELINE = .20 (H)
JAN	BDL	BDL	BDL	BDL
	BDL	BDL	BDL	BDL
	BDL	.010 <T	.	.
MAR	BDL	BDL	BDL	BDL
APR	.030 <T	.030 <T	.030 <T	BDL
MAY	.060 <T	BDL	.020 <T	BDL
JUN	.020 <T	.020 <T	BDL	BDL
JUL	.080 <T	.030 <T	.020 <T	.030 <T
AUG	.020 <T	.070 <T	.050 <T	BDL
SEP	BDL	.100 <T	BDL	.070 <T
OCT	BDL	.040 <T	BDL	BDL
NOV	.090 <T	.090 <T	BDL	.090 <T
DEC	.070 <T	.060 <T	BDL	BDL
CADMIUM (UG/L)		DET'N LIMIT = 0.050		GUIDELINE = 5.000 (A1)
JAN	BDL	BDL	.070 <T	BDL
	.050 <T	BDL	BDL	BDL
	.090 <T	.090 <T	.	.

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
MAR	BDL	BDL	.060 <T	BDL
APR	BDL	BDL	.060 <T	BDL
MAY	BDL	BDL	.070 <T	BDL
JUN	BDL	BDL	.210 <T	BDL
JUL	BDL	BDL	.080 <T	BDL
AUG	BDL	BDL	BDL	BDL
SEP	BDL	BDL	BDL	BDL
OCT	BDL	BDL	.080 <T	BDL
NOV	BDL	BDL	.060 <T	BDL
DEC	BDL	BDL	BDL	BDL

COBALT (UG/L) DET'N LIMIT = 0.020 GUIDELINE = 1000 (H)

JAN	.160 <T	.120 <T	.130 <T	.100 <T
	.230 <T	.160 <T	.210 <T	.180 <T
	.120 <T	.160 <T	.	.
MAR	BDL	BDL	BDL	BDL
APR	.570 <T	.520 <T	.490 <T	.470 <T
MAY	.140 <T	.100 <T	.170 <T	.080 <T
JUN	.150 <T	.070 <T	.110 <T	.080 <T
JUL	.220 <T	.090 <T	.120 <T	.110 <T
AUG	.240 <T	.120 <T	.430 <T	.160 <T
SEP	.320 <T	.100 <T	.140 <T	.150 <T
OCT	.390 <T	.190 <T	.140 <T	.160 <T
NOV	.370 <T	.140 <T	.150 <T	.120 <T
DEC	.290 <T	.170 <T	.170 <T	.160 <T

CHROMIUM (UG/L) DET'N LIMIT = 0.100 GUIDELINE = 50. (A1)

JAN	.120 <T	BDL	2.500	BDL
	.190 <T	BDL	.490 <T	BDL
	1.300	2.040	.	.
MAR	.180 <T	BDL	.100 <T	BDL
APR	.380 <T	1.100	.170 <T	.110 <T
MAY	.360 <T	.210 <T	.210 <T	.180 <T
JUN	2.200	1.300	.270 <T	1.600
JUL	.910 <T	.290 <T	.400 <T	.300 <T
AUG	.180 <T	3.400	3.000	3.000
SEP	.160 <T	2.800	.260 <T	.160 <T
OCT	.350 <T	5.100	.320 <T	.340 <T
NOV	6.100	5.300	.510 <T	4.600
DEC	1.100	5.100	.360 <T	.270 <T

COPPER (UG/L) DET'N LIMIT = .100 GUIDELINE = 1000 (A3)

JAN	.860 <T	.620 <T	130.000	9.300
	1.200	.920 <T	140.000	9.300
	.850 <T	.420 <T	.	.
MAR	.900 <T	1.100	180.000	11.000
APR	.850 <T	1.100	150.000	9.500

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
MAY	2.700	.950 <T	140.000	12.000
JUN	1.300	.630 <T	110.000	20.000
JUL	1.300	.860 <T	140.000	11.000
AUG	.840 <T	.790 <T	100.000	12.000
SEP	1.900	.820 <T	160.000	22.000
OCT	.740 <T	.640 <T	160.000	21.000
NOV	.710 <T	1.500	140.000	12.000
DEC	.920 <T	.660 <T	130.000	10.000
IRON (UG/L)		DET'N LIMIT = 4.000		GUIDELINE = 300. (A3)
JAN	82.000	16.000 <T	33.000 <T	8.500 <T
	59.000	11.000 <T	58.000	6.000 <T
	58.000	7.780 <T	.	.
MAR	95.000	16.000 <T	92.000	7.100 <T
APR	190.000	63.000	210.000	29.000 <T
MAY	100.000	20.000 <T	270.000	10.000 <T
JUN	94.000	5.600 <T	61.000	19.000 <T
JUL	130.000	18.000 <T	230.000	6.900 <T
AUG	100.000	20.000 <T	230.000	8.700 <T
SEP	210.000	12.000 <T	260.000	8.000 <T
OCT	150.000	9.300 <T	260.000	BDL
NOV	130.000	6.100 <T	180.000	5.700 <T
DEC	120.000	BDL	66.000	BDL
MERCURY (UG/L)		DET'N LIMIT = 0.010		GUIDELINE = 1.000 (A1)
JAN	BDL	BDL	.	.010
	.040	.010	.	BDL
	ISS	ISS	.	.
MAR	.020	.020	.	.010
APR	.010	BDL	.	.020
MAY	.050	.020	.	.030
JUN	.020 <T	.020 <T	.	.020 <T
JUL	.040 <T	.040 <T	.	.020 <T
AUG	.050 <T	.080	.	.040 <T
SEP	.050 <T	.040 <T	.	.040 <T
OCT	.090	.030 <T	.	.040 <T
NOV	.100	.060	.	.040 <T
DEC	.070	.090	.	.050 <T
MANGANESE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 50.0 (A3)
JAN	8.700	1.700	2.500	1.300
	9.600	4.000	4.900	3.400
	9.400	1.960	.	.
MAR	12.500	5.200	7.000	4.400
APR	19.000	9.100	10.000	5.700
MAY	20.000	3.500	6.300	3.000
JUN	26.000	3.000	4.000	2.700

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
JUL	42.000	1.800	5.500	1.200
AUG	59.000	5.200	12.000	5.200
SEP	81.000	2.200	4.900	1.600
OCT	68.000	4.800	6.600	3.900
NOV	35.000	1.600	4.200	1.200
DEC	21.000	1.800	2.400	1.200
MOLYBDENUM (UG/L)		DET'N LIMIT = 0.020		GUIDELINE = 500 (H)
JAN	.330 <T	.300 <T	.310 <T	.330 <T
	.270 <T	.270 <T	.290 <T	.250 <T
	.300 <T	.280 <T	.	.
MAR	.250 <T	.290 <T	.300 <T	.260 <T
APR	.150 <T	.210 <T	.170 <T	.190 <T
MAY	.240 <T	.280 <T	.240 <T	.250 <T
JUN	.370 <T	.060 <T	.100 <T	.090 <T
JUL	.360 <T	.420 <T	.380 <T	.360 <T
AUG	.430 <T	.690	.670	.680
SEP	.420 <T	.440 <T	.450 <T	.490 <T
OCT	.430 <T	.510	.470 <T	.460 <T
NOV	.380 <T	.490 <T	.470 <T	.520
DEC	.340 <T	.440 <T	.410 <T	.470 <T
NICKEL (UG/L)		DET'N LIMIT = 0.100		GUIDELINE = 50. (F3)
JAN	.880 <T	.830 <T	1.900	.440 <T
	1.800	1.400	2.400	1.800
	.200 <T	.200 <T	.	.
MAR	BDL	BDL	.720 <T	BDL
APR	2.000	2.000	3.200	1.400
MAY	3.100	1.000 <T	1.600 <T	.660 <T
JUN	.370 <T	.120 <T	2.100	.150 <T
JUL	.990 <T	.500 <T	3.000	.580 <T
AUG	.720 <T	.490 <T	8.700	.370 <T
SEP	.660 <T	.130 <T	7.500	.390 <T
OCT	BDL	BDL	3.500	BDL
NOV	BDL	BDL	64.000	BDL
DEC	1.600 <T	1.300 <T	5.800	1.400 <T
LEAD (UG/L)		DET'N LIMIT = 0.050		GUIDELINE = 50. (A1)
JAN	.390	.200	2.100	.300
	.250	BDL	1.800	.050 <T
	.290	.060 <T	.	.
MAR	.250	.140 <T	2.500	.220
APR	.340	.310	3.200	.320
MAY	.930	.210	2.200	.270
JUN	.370	.230	2.200	.570
JUL	.560	.420	2.500	.270
AUG	.360	.330	3.400	.430

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
SEP	.820	.470	3.300	.660
OCT	.750	.460	2.500	.500
NOV	.620	.430	3.100	.380
DEC	.730	.450	2.400	.300
ANTIMONY (UG/L)		DET'N LIMIT = .050		GUIDELINE = 146. (D4)
JAN	.080 <T	.090 <T	.120 <T	.080 <T
	.100 <T	.050 <T	.100 <T	.060 <T
	.120 <T	.110 <T	.	.
MAR	.050 <T	.070 <T	.070 <T	.020 <T
APR	.070 <T	.100 <T	.090 <T	.090 <T
MAY	.130 <T	.090 <T	.140 <T	.060 <T
JUN	.150 <T	.150 <T	.200 <T	.160 <T
JUL	.140 <T	.160 <T	.170 <T	.130 <T
AUG	.580	.660	1.100	.690
SEP	.410	.470	.600	.480
OCT	.480	.500	.460	.660
NOV	.490	.610	.630	.620
DEC	.280	.260	.300	.220
SELENIUM (UG/L)		DET'N LIMIT = 0.200		GUIDELINE = 10. (A1)
JAN	.510 <T	.680 <T	.390 <T	.290 <T
	.570 <T	.550 <T	.630 <T	BDL
	.410 <T	.300 <T	.	.
MAR	.290 <T	.360 <T	.690 <T	.450 <T
APR	BDL	BDL	.290 <T	BDL
MAY	.730 <T	.500 <T	.660 <T	.930 <T
JUN	BDL	.350 <T	.640 <T	.470 <T
JUL	.220 <T	BDL	1.500 <T	.610 <T
AUG	1.100 <T	.480 <T	.920 <T	.880 <T
SEP	1.200 <T	.290 <T	1.400 <T	.290 <T
OCT	.230 <T	1.600 <T	1.800 <T	.750 <T
NOV	1.000 <T	.670 <T	1.500 <T	1.500 <T
DEC	BDL	BDL	BDL	BDL
STRONTIUM (UG/L)		DET'N LIMIT = .050		GUIDELINE = 2000.(H)
JAN	210.000	210.000	200.000	200.000
	200.000	200.000	200.000	200.000
	224.000	237.000	.	.
MAR	202.000	200.000	210.000	200.000
APR	170.000	170.000	180.000	160.000
MAY	150.000	150.000	160.000	150.000
JUN	220.000	190.000	200.000	210.000
JUL	190.000	180.000	190.000	180.000
AUG	190.000	190.000	180.000	190.000
SEP	200.000	190.000	190.000	200.000
OCT	190.000	170.000	180.000	170.000

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
NOV	170.000	170.000	180.000	170.000
DEC	170.000	170.000	170.000	160.000
TITANIUM (UG/L)			DET'N LIMIT = .050	GUIDELINE = N/A
JAN	5.700	3.500	3.800	3.400
	8.900	6.900	6.900	7.000
	5.600	4.000	-	-
MAR	12.000	11.000	11.000	10.000
APR	19.000	14.000	13.000	12.000
MAY	6.200	3.400	3.900	3.800
JUN	4.900	2.600	2.600	2.800
JUL	7.400	4.200	4.800	4.200
AUG	13.000	10.000	11.000	10.000
SEP	13.000	5.800	6.000	5.300
OCT	9.400	2.100	2.400	2.800
NOV	5.200	.450 <T	.670 <T	1.100 <T
DEC	6.400	2.500	2.700	2.300
THALLIUM (UG/L)			DET'N LIMIT = .010	GUIDELINE = 13. (D4)
JAN	.020 <T	.010 <T	.030 <T	.020 <T
	BDL	BDL	BDL	BDL
	.010 <T	.030 <T	-	-
MAR	BDL	BDL	BDL	BDL
APR	BDL	BDL	BDL	BDL
MAY	BDL	BDL	BDL	BDL
JUN	.020 <T	BDL	BDL	.030 <T
JUL	BDL	BDL	BDL	BDL
AUG	BDL	BDL	.020 <T	BDL
SEP	BDL	BDL	BDL	BDL
OCT	BDL	BDL	BDL	BDL
NOV	.020 <T	BDL	BDL	.020 <T
DEC	.020 <T	BDL	BDL	BDL
URANIUM (UG/L)			DET'N LIMIT = .020	GUIDELINE = 20. (A2)
JAN	.300	.200	.200	.200
	.320	.200	.200	.270
	.430	.240	-	-
MAR	.230	.080 <T	.100 <T	.090 <T
APR	.270	.130 <T	.110 <T	.110 <T
MAY	.280	.100 <T	.070 <T	.080 <T
JUN	.310	.030 <T	.040 <T	.040 <T
JUL	.220	BDL	BDL	BDL
AUG	.220	.040 <T	.030 <T	BDL
SEP	.230	BDL	.050 <T	.030 <T
OCT	.250	.040 <T	BDL	BDL
NOV	.260	.070 <T	.070 <T	.070 <T
DEC	.330	.040 <T	BDL	.040 <T

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
VANADIUM (UG/L)			DET'N LIMIT = .050	GUIDELINE = 100 (H)
JAN	.340 <T	.240 <T	.320 <T	.250 <T
	.250 <T	.180 <T	.270 <T	.180 <T
	.330 <T	.260 <T	-	-
MAR	.250 <T	.140 <T	.230 <T	.130 <T
APR	.550	.360 <T	.400 <T	.290 <T
MAY	.420 <T	.250 <T	.360 <T	.230 <T
JUN	.410 <T	.070 <T	.110 <T	.070 <T
JUL	.690	.190 <T	.290 <T	.200 <T
AUG	.870	.680	.700	.630
SEP	.980	.470 <T	.580	.410 <T
OCT	.830	.490 <T	.590	.480 <T
NOV	.530	.180 <T	.330 <T	.210 <T
DEC	.450 <T	.170 <T	.200 <T	.150 <T
ZINC (UG/L)			DET'N LIMIT = .001	GUIDELINE = 5000. (A3)
JAN	3.700	1.200	190.000	8.200
	1.600	.760 <T	180.000	8.900
	1.300	.690 <T	-	-
MAR	2.280	2.200	240.000	11.000
APR	2.200	2.100	180.000	11.000
MAY	3.800	2.500	170.000	11.000
JUN	2.300	2.100	130.000	14.000
JUL	3.300	3.700	170.000	7.200
AUG	1.800	3.100	130.000	6.900
SEP	3.100	2.900	210.000	18.000
OCT	1.900	2.300	250.000	14.000
NOV	1.600	2.000	220.000	9.000
DEC	2.500	2.800	180.000	10.000

	WATER TREATMENT PLANT			DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1		
			STANDING	FREE FLOW	
CHLOROPHENOLS					
246-TRICHLOROPHENOL (NG/L)			DET'N LIMIT = 50.		GUIDELINE = 5000 (B1)
JUN	BDL	30.000 <T	.	.	
NOV	BDL	BDL	.	.	

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
PESTICIDES & PCB				
ALPHA BHC (NG/L)			DET'N LIMIT = 1.000	GUIDELINE = 700 (G)
JAN	1.000 <T	1.000 <T	.	1.000 <T
	BDL	BDL	.	BDL
	1.000 <T	1.000 <T	.	.
MAR	BDL	BDL	.	BDL
APR	BDL	BDL	.	4.000 <T
MAY	BDL	BDL	.	1.000 <T
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	BDL
AUG	!LA	BDL	.	BDL
SEP	BDL	BDL	.	BDL
OCT	BDL	BDL	.	BDL
NOV	1.000 <T	BDL	.	BDL
DEC	BDL	BDL	.	BDL
LINDANE (NG/L)			DET'N LIMIT = 1.000	GUIDELINE = 4000 (A1)
JAN	BDL	BDL	.	BDL
	BDL	BDL	.	BDL
	BDL	BDL	.	.
MAR	BDL	BDL	.	BDL
APR	BDL	BDL	.	4.000 <T
MAY	BDL	BDL	.	BDL
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	BDL
AUG	!LA	BDL	.	BDL
SEP	BDL	BDL	.	BDL
OCT	BDL	BDL	.	BDL
NOV	1.000 <T	BDL	.	BDL
DEC	BDL	BDL	.	BDL

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
PHENOLICS (UG/L)	PHENOLICS		DET'N LIMIT = 0.2	GUIDELINE = 2.00 (A3)
JAN	.600 <T	.600 <T	.	.
	BDL	BDL	.	.
	BDL	.600 <T	.	.
MAR	BDL	BDL	.	.
APR	BDL	BDL	.	.
MAY	.600 <T	.800 <T	.	.
JUN	2.000	.200 <T	.	.
JUL	1.600	.200 <T	.	.
AUG	1.600	1.400	.	.
SEP	1.200	BDL	.	.
OCT	2.800	1.800	.	.
NOV	3.000	1.600	.	.
DEC	3.000	1.600	.	.

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
VOLATILES				
BENZENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 5.0 (B1)
JAN	!AW	!AW	.	!AW
	BDL	BDL	.	.
APR	BDL	BDL	.	BDL
MAY	BDL	BDL	.	BDL
JUN	BDL	BDL	.	BDL
JUL	.050 <T	.050 <T	.	BDL
AUG	BDL	BDL	.	BDL
SEP	BDL	BDL	.	BDL
OCT	BDL	BDL	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL
TOLUENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 24.0 (B4)
JAN	!AW	!AW	.	!AW
	BDL	BDL	.	.
APR	BDL	.100 <T	.	.050 <T
MAY	BDL	BDL	.	BDL
JUN	BDL	BDL	.	BDL
JUL	BDL	.050 <T	.	BDL
AUG	BDL	BDL	.	BDL
SEP	BDL	BDL	.	BDL
OCT	BDL	.050 <T	.	.050 <T
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL
ETHYLBENZENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 2.4 (B4)
JAN	!AW	!AW	.	!AW
	BDL	BDL	.	.
APR	BDL	BDL	.	BDL
MAY	BDL	.150 <T	.	BDL
JUN	BDL	.200 <T	.	.050 <T
JUL	BDL	.100 <T	.	.100 <T
AUG	BDL	.100 <T	.	BDL
SEP	BDL	.050 <T	.	BDL
OCT	BDL	.150 <T	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL
M-XYLENE (UG/L)		DET'N LIMIT = .100		GUIDELINE = 300 (B4)
JAN	!AW	!AW	.	!AW
	BDL	BDL	.	.
APR	BDL	BDL	.	BDL
MAY	BDL	BDL	.	BDL
JUN	BDL	.200 <T	.	BDL
JUL	BDL	BDL	.	BDL

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
AUG	BDL	BDL	.	BDL
SEP	BDL	.100 <T	.	BDL
OCT	BDL	BDL	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL

O-XYLENE (UG/L) DET'N LIMIT = .050 GUIDELINE = 300 (B4)

JAN	!AW	!AW	.	!AW
	BDL	BDL	.	.
APR	BDL	.050 <T	.	BDL
MAY	BDL	BDL	.	BDL
JUN	BDL	.150 <T	.	BDL
JUL	BDL	BDL	.	BDL
AUG	BDL	BDL	.	BDL
SEP	BDL	.050 <T	.	BDL
OCT	BDL	.050 <T	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	.050 <T	.	BDL

STYRENE (UG/L) DET'N LIMIT = .050 GUIDELINE = 46.5 (D2)

OCT	BDL	.050 <T	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL

CHLOROFORM (UG/L) DET'N LIMIT = .100 GUIDELINE = 350 (A1+)

JAN	!AW	!AW	.	!AW
	.200 <T	.200 <T	.	.
APR	.200 <T	123.000	.	97.300
MAY	.700 <T	93.000	.	84.700
JUN	BDL	15.500	.	17.100
JUL	.400 <T	23.700	.	25.200
AUG	.300 <T	5.000	.	2.700
SEP	.100 <T	39.700	.	40.100
OCT	BDL	49.100	.	49.500
NOV	BDL	41.300	.	43.500
DEC	BDL	43.500	.	52.400

111, TRICHLOROETHANE (UG/L) DET'N LIMIT = .020 GUIDELINE = 200 (D1)

JAN	!AW	!AW	.	!AW
	.040 <T	.060 <T	.	.
APR	BDL	BDL	.	BDL
MAY	BDL	BDL	.	BDL
JUN	BDL	BDL	.	BDL
JUL	BDL	BDL	.	BDL
AUG	BDL	BDL	.	BDL
SEP	BDL	BDL	.	BDL

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
OCT	BDL	BDL	.	BDL
NOV	BDL	BDL	.	BDL
DEC	BDL	BDL	.	BDL
DICHLOROBROMOMETHANE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 350 (A1+)
JAN	IAW	IAW	.	IAW
	BDL	BDL	.	.
APR	.200 <T	7.300	.	6.650
MAY	.450 <T	8.000	.	5.550
JUN	BDL	6.300	.	6.900
JUL	BDL	9.950	.	9.550
AUG	.200 <T	1.900	.	.600
SEP	.050 <T	8.950	.	8.700
OCT	BDL	8.450	.	8.500
NOV	BDL	9.450	.	9.550
DEC	BDL	7.950	.	8.750
CHLORODIBROMOMETHANE (UG/L)		DET'N LIMIT = .100		GUIDELINE = 350 (A1+)
JAN	IAW	IAW	.	IAW
	BDL	BDL	.	.
APR	BDL	.500 <T	.	.600 <T
MAY	.300 <T	.300 <T	.	BDL
JUN	BDL	2.500	.	2.300
JUL	BDL	3.300	.	2.600
AUG	.200 <T	.500 <T	.	.200 <T
SEP	BDL	.900 <T	.	.900 <T
OCT	BDL	1.400	.	.700 <T
NOV	BDL	.800	.	1.900
DEC	BDL	.600 <T	.	.500 <T
T-CHLOROETHYLENE (UG/L)		DET'N LIMIT = .050		GUIDELINE = 10.0 (C2)
JAN	IAW	IAW	.	IAW
	BDL	BDL	.	.
APR	BDL	.100 <T	.	BDL
MAY	BDL	BDL	.	BDL
JUN	BDL	BDL	.	BDL
JUL	BDL	.050 <T	.	BDL
AUG	BDL	BDL	.	BDL
SEP	BDL	BDL	.	BDL
OCT	BDL	BDL	.	.050 <T
NOV	BDL	.050 <T	.	BDL
DEC	BDL	.050 <T	.	.050 <T
TOTL TRIHALOMETHANES (UG/L)		DET'N LIMIT = .500		GUIDELINE = 350 (A1)
JAN	IAW	IAW	.	IAW
	.200	.200	.	.

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM	
	RAW	TREATED	SITE 1	
			STANDING	FREE FLOW
APR	BDL	130.800	.	104.550
MAY	1.450 <T	101.300	.	90.250
JUN	BDL	24.300	.	26.300
JUL	BDL	36.950	.	37.350
AUG	.700 <T	7.400	.	3.500 <T
SEP	BDL	49.550	.	49.700
OCT	BDL	58.950	.	58.700
NOV	BDL	51.550	.	54.950
DEC	BDL	52.050	.	61.650

Table 6

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML(A1)
P/A BOTTLE		0	0 (A1*)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL(A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	NG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	NG/L	1.0	10. (C1)
HEXACHLOROETHANE	NG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	NG/L	1.000	N/A
PENTACHLOROBENZENE	NG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	NG/L	50.	5000. (B1)
PENTACHLOROPHENOL	NG/L	50.	60000. (B1)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DMSNLESS	N/A	6.5-8.5(A4)
FIELD TEMPERATURE	°C	N/A	<15 °C(A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500(A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20(A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100(A4)
MAGNESIUM	MG/L	.05	30. (F2)
SODIUM	MG/L	.20	200. (C3)
AMMONIUM TOTAL	MG/L	.002	.05(F2)
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DMSNLESS	N/A	6.5-8.5(A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
BERYLLIUM	UG/L	.010	0.20	(H)
CADMIUM	UG/L	.050	5.0	(A1)
COBALT	UG/L	.020	1000.	(H)
CHROMIUM	UG/L	.100	50.	(A1)
COPPER	UG/L	.100	1000.	(A3)
IRON	UG/L	4.0	300.	(A3)
MERCURY	UG/L	.01	1.0	(A1)
MANGANESE	UG/L	.050	50.	(A3)
MOLYBDENUM	UG/L	.020	500.	(H)
NICKEL	UG/L	.100	50.	(F3)
LEAD	UG/L	.050	50.	(A1)
SELENIUM	UG/L	.200	10.	(A1)
SILVER	UG/L	.020	50.	(A1)
STRONTIUM	UG/L	.050	2000.	(H)
THALLIUM	UG/L	.010	13.	(D4)
TITANIUM	UG/L	.050	N/A	
URANIUM	UG/L	.020	20.	(A2)
VANADIUM	UG/L	.050	100.	(H)
ZINC	UG/L	.020	500.	(A3)
PHENOLICS				
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0	(A3)
PESTICIDES & PCB				
ALDRIN	NG/L	1.0	700.	(A1)
AMETRINE	NG/L	50.	300000.	(D3)
ATRAZINE	NG/L	50.	60000.	(B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700.	(G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300.	(G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000.	(A1)
ALPHA CHLORDANE	NG/L	2.0	7000.	(A1)
GAMMA CHLORDANE	NG/L	2.0	7000.	(A1)
BLADEX	NG/L	100.	10000.	(B3)
DIELDRIN	NG/L	2.0	700.	(A1)
METHOXYCHLOR	NG/L	5.0	100000.	(A1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000.	(D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000.	(D4)
ENDRIN	NG/L	4.0	200.	(A1)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	N/A	
HEPTACHLOR EPOXIDE	NG/L	1.0	3000.	(A1)
HEPTACHLOR	NG/L	1.0	3000.	(A1)
METOLACHLOR	NG/L	500.	50000.	(B3)
MIREX	NG/L	5.0	N/A	
OXYCHLORDANE	NG/L	2.0	N/A	
O,P-DDT	NG/L	5.0	30000.	(A1)
PCB	NG/L	20.0	3000.	(A2)
O,P-DDD	NG/L	5.0	N/A	
PPDDE	NG/L	1.0	30000.	(A1)
PPDDT	NG/L	5.0	30000.	(A1)
ATRATONE	NG/L	50.	N/A	
ALACHLOR	NG/L	500.	35000.	(D2)
PROMETONE	NG/L	50.	52500.	(D3)
PROPAZINE	NG/L	50.	16000.	(D2)
PROMETRYNE	NG/L	50.	1000.	(B3)
SENCOR (METRIBUZIN)	NG/L	100.	80000.	(B2)
SIMAZINE	NG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A
BENZO(B)CHRYSENE	NG/L	2.0	N/A
CORONENE	NG/L	10.0	N/A
SPECIFIC PESTICIDES			
TOXAPHENE	NG/L	N/A	5000. (A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	280000. (B1)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000. (A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID	NG/L	200.	18000. (B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A
DICAMBA	NG/L	100.	87000. (B3)
PICHLORAM	NG/L	100.	2450000. (D3)
SILVEX (2,4,5-TP)	NG/L	50.	10000. (A1)
DIAZINON	NG/L	20.	14000. (A1)
DICHLOROVOS	NG/L	20.	N/A
DURSBAN	NG/L	20.	N/A
ETHION	NG/L	20.	35000. (G)
GUTHION	NG/L	N/A	N/A
MALATHION	NG/L	20.	160000. (G)
MEVINPHOS	NG/L	20.	N/A
METHYL PARATHION	NG/L	50.	7000. (B3)
METHYLTRITHION	NG/L	20.	N/A
PARATHION	NG/L	20.	35000. (B1)
PHORATE (THIMET)	NG/L	20.	35. (D2)
RELDAN	NG/L	20.	N/A
RONNEL	NG/L	20.	N/A
AMINOCARB	NG/L	N/A	N/A
BENOMYL	NG/L	N/A	N/A
BUX (METALKAMATE)	NG/L	2000.	N/A
CARBOFURAN	NG/L	2000.	18000. (D3)
CICP (CHLORPROPHAM)	NG/L	2000.	350000. (G)
DIALLATE	NG/L	2000.	30000. (H)
EPTAM	NG/L	2000.	N/A
IPC	NG/L	2000.	N/A
PROPOXUR (BAYGON)	NG/L	2000.	90000. (G)
SEVIN (CARBARYL)	NG/L	200.	70000. (A1)
SUTAN (BUTYLATE)	NG/L	2000.	245000. (D3)
VOLATILES			
BENZENE	UG/L	.050	5.0 (B1)
TOLUENE	UG/L	.050	24.0 (B4)
ETHYLBENZENE	UG/L	.050	2.4 (B4)
PARA-XYLENE	UG/L	.100	300. (B4)
META-XYLENE	UG/L	.100	300. (B4)
ORTHO-XYLENE	UG/L	.050	300. (B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0 (D1)
ETHLYENE DIBROMIDE	UG/L	.05	50. (G)
METHYLENE CHLORIDE	UG/L	.500	1750. (D3)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	350. (D3)
1,1-DICHLOROETHANE	UG/L	.100	N/A
CHLOROFORM	UG/L	.100	350. (A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200. (D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0 (D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0 (D1)
1,2-DICHLOROPROPANE	UG/L	.050	10.0 (G)
TRICHLOROETHYLENE	UG/L	.100	5.0 (D1)
DICHLOROBROMOMETHANE	UG/L	.050	350. (A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350. (A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0 (C2)
BROMOFORM	UG/L	.200	350. (A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17(D4)
CHLOROBENZENE	UG/L	.100	1510. (D3)
1,4-DICHLOROBENZENE	UG/L	.100	5.0 (B1)
1,3-DICHLOROBENZENE	UG/L	.100	130. (G)
1,2-DICHLOROBENZENE	UG/L	.050	200. (B1)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A
TOTAL TRIHALOMETHANES	UG/L	.500	350. (A1)
STYRENE	UG/L	.05	46.5 (D2)